

1 1. A catheter assembly for delivering an expansible  
2 stent to a body lumen and lining said stent with a hydrogel,  
3 comprising

4 (a) a catheter comprising a balloon at least a  
5 portion of which is coated with a hydrogel; and

6 (b) said stent mounted on said balloon in a  
7 contracted condition for passage with said catheter into  
8 said body lumen whereby expansion of said balloon lodges  
9 said stent in said body lumen with a hydrogel coated on an  
10 inner surface of the stent.

1 2. The assembly of claim 1, wherein said hydrogel is  
2 crosslinked.

1 3. The assembly of claim 1, wherein said hydrogel is  
2 selected from the group consisting of a polyacid, cellulosic  
3 polymer, collagen, gelatin, albumin, alginate, poly 2-  
4 hydroxyethyl methyl acrylate (HEMA), polyvinylpyrrolidone,  
5 maleic anhydride polymer, polyamide, polyacrylamide,  
6 polyvinyl alcohol, polyethylene glycol, and polyethylene  
7 oxide, and polysaccharide.

1 4. The assembly of claim 1, wherein said hydrogel is  
2 poly(acrylic acid).

1 5. The assembly of claim 4, wherein said  
2 poly(acrylic acid) is crosslinked.

1 6. The assembly of claim 1, wherein said hydrogel is  
2 hyaluronic acid.

1 7. The assembly of claim 6, wherein said hyaluronic  
2 acid is crosslinked.

1 8. The assembly of claim 1, wherein said hydrogel  
2 comprises a therapeutic agent.

1 9. The assembly of claim 8, wherein said therapeutic  
2 agent is an anti-thrombogenic agent.

1 10. The assembly of claim 9, wherein said anti-  
2 thrombogenic agent is selected from the group consisting of  
3 heparin, PPACK, enoxaprin, aspirin, and hirudin.

1 11. The assembly of claim 8, wherein said  
2 therapeutic agent inhibits platelet deposition.

1 12. The assembly of claim 8, wherein said  
2 therapeutic agent is a thrombolytic agent.

1 13. The assembly of claim 12, wherein said  
2 thrombolytic agent is selected from the group consisting of  
3 urokinase, streptokinase, and tissue plasminogen activator.

1 14. A catheter assembly for delivering an expansible  
2 stent to a body lumen and lining said stent with a hydrogel,  
3 comprising

4 (a) a catheter comprising a balloon and a  
5 delivery port for administering a hydrogel to an inner  
6 surface of said stent; and

7 (b) said stent mounted on said balloon, said  
8 stent being in a contracted condition for passage with said  
9 catheter into said body lumen whereby expansion of said  
10 balloon lodges said stent in said body lumen, wherein said  
11 hydrogel is administered through said delivery port and  
12 deposited on an inner surface of said stent as a lining.

1 15. The assembly of claim 14, wherein said balloon  
2 comprises a first layer and a second outer aperatured layer  
3 overlying said delivery port, wherein said hydrogel is  
4 administered through said outer aperatured layer.

1 16. The assembly of claim 14, wherein said hydrogel  
2 comprises a therapeutic agent.

1 17. A method for lining a stent, comprising

2 (a) providing a catheter assembly comprising a  
3 balloon at least a portion of which is coated with a  
4 hydrogel, wherein an expansible stent is mounted on said  
5 balloon in a contracted condition.

6 (b) introducing said assembly into a body  
7 lumen, and

8 (c) inflating said balloon to lodge said stent  
9 in said body lumen and to release said hydrogel from said  
10 coated portion to an inner surface of said stent as a  
11 lining.

1 18. The method of claim 17, wherein said body lumen  
2 is a blood vessel.

1 19. The method of claim 18, wherein said vessel is  
2 an occluded artery.

1 20. The method of claim 17, wherein said hydrogel  
2 comprises a therapeutic agent.

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1 21. A method of lining a stent positioned in a body  
2 lumen, comprising:

3 (a) providing a catheter comprising a balloon  
4 at least a portion of which is coated with a hydrogel,

5 (b) introducing said catheter into said body  
6 lumen,

7 (c) advancing said catheter in said body lumen  
8 until said coated portion is positioned proximate to an  
9 inner surface of said stent; and

10 (d) inflating said balloon to release said  
11 hydrogel from said coated portion to said inner surface of  
12 said stent as a lining.

1 22. The method of claim 21, further comprising  
2 crosslinking said hydrogel.

1 23. The method of claim 21, wherein said catheter  
2 further comprises a sheath over said hydrogel.

1 24. The method of claim 23, comprising removing said  
2 sheath prior to inflating said balloon.

1           25. A method of lining a stent positioned in a body  
2 lumen, comprising

3           (a) providing a catheter comprising a balloon  
4 and a delivery port, wherein said balloon comprises a first  
5 layer and a second outer aperatured layer overlying said  
6 delivery port,

7           (b) introducing said catheter into said body  
8 lumen,

9           (c) advancing said catheter in said body lumen  
10 until said outer aperatured layer is positioned proximate to  
11 an inner surface of said stent;

12           (d) delivering a hydrogel into a space between  
13 said first layer and said second outer aperatured layer, and

14           (d) inflating said balloon to press said  
15 hydrogel through said outer aperatured layer, wherein said  
16 hydrogel is deposited on said inner surface of said stent as  
17 a lining.

1           26. The method of claim 25, further comprising  
2 crosslinking said hydrogel.

20150420-013102

1           27. A method of selectively lining a permeable stent  
2 to treat an aneurism, comprising  
3           (a) providing a catheter comprising a balloon  
4 at least a portion of which is coated with a hydrogel,  
5           (b) introducing said catheter into an  
6 aneurismal blood vessel comprising said permeable stent in  
7 the region of said aneurism,  
8           (c) advancing said catheter in said vessel  
9 until said coated portion is positioned proximate to said  
10 aneurism; and  
11           (d) inflating said balloon to release said  
12 hydrogel from said coated portion to an inner surface of  
13 said stent proximate to said aneurism to selectively line  
14 said stent, wherein said hydrogel renders said surface  
15 impermeable thereby reducing blood flow into said aneurism.

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